

FINAL REPORT

Dundee Hackney Carriage Unmet Demand Survey

Prepared for

Dundee City Council

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Section 1 – Introduction

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Introduction

1.1 General

This study has been conducted by CH2M on behalf of Dundee City Council (DCC). The overall objective is to provide a full survey of demand for taxis in Dundee and to determine whether or not significant unmet demand for taxis exists in terms of section 10 (3) of the Civic Government (Scotland) Act 1982. Specific objectives of the study are to determine:

- Whether there is any significant unmet demand for taxi services in Dundee; and
- If significant unmet demand is found, recommend how many licences would be required to meet this.

In 2007 the Scottish Government issued Best Practice Guidance for Taxi and Private Hire licensing. The Scottish Government reissued this guidance in April 2012 in recognition of a number of legislative changes. Essentially, the Government stated that the present legal position on quantity restrictions for taxis is set out in section 10 (3) of the 1982 Act. The Scottish Government takes the view that decisions as to the case for limiting taxi licences should remain a matter for licensing authorities in the light of local circumstances. The Guidance provides local authorities with assistance in local decision making when they are determining the licensing policies for their local area. Guidance is provided on a range of issues including flexible taxi services, vehicle licensing, driver licensing and training.

The Equality Act 2010 provides a new cross-cutting legislative framework to protect the rights of individuals and advance equality of opportunity for all; to update, simplify and strengthen the previous legislation; and to deliver a simple, modern and accessible framework of discrimination law which protects individuals from unfair treatment and promotes a fair and more equal society.

The provisions in the Equality Act will come into force at different times to allow time for the people and organisations affected by the new laws to prepare for them. The Government is considering how the different provisions will be commenced so that the Act is implemented in an effective and proportionate way. Some provisions came into force on the 1st October 2010 however most of the provisions for taxi accessibility are still to come into play.

Sections 165, 166 and 167 of the Equality Act 2010 are concerned with the provision of wheelchair accessible vehicles and place obligations on drivers of registered vehicles to carry out certain duties unless granted an exemption by the licensing authority on the grounds of medical or physical condition. Section 166 will allow taxi drivers to apply to their licensing authority for an exemption from Section 165 of the Equality Act 2010. The UK Government are still considering the commencement strategy for Section 165. This section when commenced will impose a duty on taxi and private hire car drivers with wheelchair accessible vehicles to provide assistance to disabled passengers.

Background

2.1 General

This section of the report provides a general background to the taxi market in Dundee and the relevant legislation governing the market.

2.2 Background

Dundee is a city and council area located in eastern Scotland, with a resident population of 148,710 (2017 mid year estimate, National Records of Scotland). Dundee is in the midst of significant investment and regeneration especially around its waterfront, with the Victoria and Albert museum due to open in September 2018. Some £1 billion is being invested in the Dundee waterfront creating the potential for 7,000 jobs and significant increases in visitor numbers.

In terms of the licensing of taxis and private hire vehicles, Dundee City Council operated a derestricted market until 2013 when the Licensing Committee reinstated the numerical limit at 611. An unmet demand study was undertaken in 2015 and the limit was reduced to 605. In 2016, following a further unmet demand study, the limit was reduced to 575. A further unmet demand study was undertaken in 2017 and the authority resolved that no new licences be issued until the number of licences fell below 555.

As of January 2018, there were 582 licensed taxis operating in Dundee, of which 256 (44%) were saloon vehicles and 326 (56%) were wheelchair accessible vehicles.

The private hire fleet consists of 215 vehicles. In view of the size of this fleet relative to the taxi fleet, it is evident that taxis are the dominant force in the Dundee market.

2.3 Provision of Taxi Stands

There are currently 22 official taxi stances located throughout the Dundee licensing area; the locations and times of operation of each of the stances are provided in Appendix 1. (Add to appendix http://www.dundeetravelinfo.com/downloads/taxirankloactions_july2014.pdf)

2.4 Taxi Fares and Licence Premiums

Taxi fares are regulated by the Local Authority. There are four tariffs across the following periods;

- Daytime – Monday to Sunday, 6am until 10pm;
- Weekday evenings – Monday to Thursday, 10pm until 6am;
- Weekend evenings – Friday to Sunday, 10pm until 6am;
- Festive period – 24th December from 6pm until 6am 27th December, and 31st January from 6pm until 6am 3rd January

The standard charge tariff is made up of two elements: an initial fee (or 'drop') of £3.10 for entering the vehicle, and a fixed price addition of 16p-22p per 0.1 mile, dependent on the tariff in place, or uncompleted part thereof travelled, plus fixed additions for waiting time. Fixed additional charges are also in place for extra passengers or luggage. A standard two-mile daytime fare undertaken by one individual would therefore be £5.66. The tariffs are outlined in detail in the fare card in Figure 2.1 below.

Figure 2.1 – Farecard for Dundee taxi hire. The values were set June 2018



DUNDEE CITY COUNCIL - FARES FOR THE HIRE OF TAXIS

For the first passenger carried:-

CHARGES	TARIFF 1 DAYTIME	TARIFF 2 WEEKDAY EVENINGS	TARIFF 3 WEEKEND EVENINGS	TARIFF 4 FESTIVE PERIOD
Initial hire not exceeding 4/10th of a mile (704 yards) or 189 seconds of waiting time or a combination of both time and distance	Monday to Sunday 6am to 10pm £3.10	Monday to Thursday 10pm to 6am £3.41	Friday to Sunday 10pm to 6am £3.72	Throughout period £4.34
Each additional 1/10th of a mile (176 yards) or part thereof, or 42 seconds of waiting time or part thereof, or a combination of both time and distance	16p	17p	19p	22p
EXTRAS - ALL TARIFFS	For each passenger in excess of the first passenger			40p
	For each parcel carried in the luggage compartment, boot or rack			40p
FESTIVE PERIOD	Between 6pm on 24th December until 6am on 27th December and between 6pm on 31st December until 6am on 3rd January			

NB No charge shall be made for a child's perambulator or carriage, any items designed to assist the mobility of users such as wheelchairs or walkers, a bag or bags containing loose groceries or shopping carried in a taxi, whether in the luggage compartment or inside the taxi.

SOILING CHARGE (which results in the vehicle being taken off service for any period of time) Minimum - £25, Maximum - £50

1st June 2018

c:\users\lisa~1.ar\appdata\local\temp\14\domino web access\taxi fare advert 2018.doc

The Private Hire and Taxi Monthly magazine publish monthly league tables of the fares for 365 authorities over a two mile journey. Each journey is ranked with one being the most expensive. The July 2018 table shows Dundee rated 209th in the table, indicating that Dundee has lower than average fares. Table 2.1 provides a comparison of where a selection of other authorities in Scotland, based on population figures and the presence of a large city or town, rank in terms of fares, showing that fares in Dundee are mid-range in comparison to other similar authorities.

Section 2 – Background

Table 2.1 - Comparison of neighbouring authorities in terms of fares (Source Private Hire and Taxi Monthly, July 2018)

Local Authority	Rank
Fife	53
City of Edinburgh	85
Glasgow City	178
Dundee	209
Renfrewshire	225
West Lothian	231
Aberdeen City	263
South Lanarkshire	304
North Lanarkshire	324

Definition, Measurement and Removal of Significant Unmet Demand

3.1 Introduction

Section 3 provides a definition of significant unmet demand derived from experience of over 100 unmet demand studies since 1987. This leads to an objective measure of significant unmet demand that allows clear conclusions regarding the presence or absence of this phenomenon to be drawn. Following this, a description is provided of the SUDSIM model which is a tool developed to determine the number of taxi licences required to eliminate significant unmet demand, where such unmet demand is found to exist. This method has been applied to numerous local authorities and has been tested in the courts as a way of determining if there is unmet demand for taxis.

3.2 Overview

Significant Unmet Demand (SUD) has two components:

- Patent demand – that which is directly observable; and
- ‘Suppressed’ demand – that which is released by additional supply.

Patent demand is measured using stance observation data. Suppressed (or latent) demand is assessed using data from the stance observations and public attitude interview survey. Both are brought together in a single measure of unmet demand, ISUD (Indicator of Significant Unmet Demand).

3.3 Defining Significant Unmet Demand

The provision of evidence to aid licensing authorities in making decisions about taxi provision requires that surveys of demand be carried out. Results based on observations of activity at taxi stances have become the generally accepted minimum requirement.

The definition of significant unmet demand is informed by two Court of Appeal judgements:

- R v Great Yarmouth Borough Council ex p Sawyer (1987); and
- R v Great Castle Point Borough Council ex p Maude (2002).

The Sawyer case provides an indication of the way in which an Authority may interpret the findings of survey work. In the case of Sawyer v Yarmouth City Council, 16 June 1987, Lord Justice Woolf ruled that an Authority is entitled to consider the situation from a temporal point of view as a whole. It does not have to condescend into a detailed consideration as to what may be the position in every limited part of the Authority in relation to the particular time of day. The authority is required to give effect to the language used by the Section (Section 16) and can ask itself with regard to the area as a whole whether or not it is satisfied that there is no significant unmet demand.

The term ‘suppressed’ or ‘latent’ demand has caused some confusion over the years. It should be pointed out that following Maude v Castle Point Borough Council, heard in the Court of Appeal in October 2002, the term is now interpreted to relate purely to that demand that is measurable. Following Maude, there are two components to what Lord Justice Keene prefers to refer to as ‘suppressed demand’:

- What can be determined inappropriately met demand. This is current observable demand that is being met by, for example, private hire cars illegally ranking up; and
- That which arises if people are forced to use some less satisfactory method of travel due to the unavailability of a taxi.

If demand remained at a constant level throughout the day and week, the identification and treatment of significant unmet demand would be more straight-forward. If there were more cabs than required to meet the existing demand there would be queues of cabs on stances throughout the day and night and passenger waiting times would be zero. Conversely, if too few cabs were available there would tend to be queues of passengers throughout the day. In such a case it would, in principle, be a simple matter to estimate the increase in supply of cabs necessary to just eliminate passenger queues.

Demand for taxis varies throughout the day and on different days. The problem, introduced by variable demand, becomes clear when driver earnings are considered. If demand is much higher late at night than it is during the day, an increase in cab supply large enough to eliminate peak delays will have a disproportionate effect on the occupation rate of cabs at all other times. Earnings will fall, and fares might have to be increased sharply to sustain the supply of cabs at or near its new level.

The main implication of the present discussion is that it is necessary, when considering whether significant unmet demand exists, to take account of the practicability of improving the standard of service through increasing supply.

3.4 Measuring Patent Significant Unmet Demand

Taking into account the economic, administrative and legal considerations, the identification of this important aspect of significant unmet demand should be treated as a three stage process as follows:

- Identify the demand profile;
- Estimate the passenger and cab delays; and
- Compare estimated delays to the demand profile.

The broad interpretation to be given to the results of this comparison are summarised in Table 3.1.

Table 3.1 – Existing of SUD determined by comparing demand and delay profiles

Demand is:	Delays during peak only	Delays during peak and other times
Highly peaked	No SUD	Possibly a SUD
Not highly peaked	Possibly a SUD	Possible a SUD

It is clear from the content of the table that the simple descriptive approach fails to provide the necessary degree of clarity to support the decision making process in cases where the unambiguous conclusion is not achievable. However, it does provide the basis of a robust assessment of the principal component of significant unmet demand. The analysis is therefore extended to provide a more formal numerical measure of significant unmet demand. This is based on the principles contained in the descriptive approach but provides greater clarity. A description follows.

The measure feeds directly off the results of observations of activity at the stances. In particular, it takes account of:

- Case law that suggests an authority should take a broad view of the market;
- The effect of different levels of supply during different periods at the stance on service quality; and
- The need for consistent treatment of different authorities, and the same authority over time.

The Index of Significant Unmet Demand (ISUD) was developed in the early 1990's and is based on the following formula. The SF element was introduced in 2003 and the LDF element was introduced in 2006 to reflect the increased emphasis on latent demand in DfT Guidance.

$$\text{ISUD} = \text{APD} \times \text{PF} \times \text{GID} \times \text{SSP} \times \text{SF} \times \text{LDF}$$

Where:

APD = Average Passenger Delay calculated across the entire week in minutes.

PF = Peaking Factor. If passenger demand is highly peaked at night, the factor takes the value of 0.5. If it is not peaked the value is 1. Following case law this provides dispensation for the effects of peaked demand on the ability of the Trade to meet that demand. To identify high peaking we are generally looking for demand at night (at weekends) to be substantially higher than demand at other times.

GID = General Incidence of Delay. This is measured as the proportion of passengers who travel in hours where the delay exceeds one minute.

SSP = Steady State Performance. The corollary of providing dispensation during the peaks in demand is that it is necessary to focus on performance during "normal" hours. This is measured by the proportion of hours during weekday daytimes when the market exhibits excess demand conditions (i.e. passenger queues form at stances).

SF = Seasonality Factor. Due to the nature of these surveys it is not possible to collect information throughout an entire year to assess the effects of seasonality. Experience has suggested that taxi demand does exhibit a degree of seasonality and this is allowed for by the inclusion of a seasonality factor. The factor is set at a level to ensure that a marginal decision either way obtained in an "untypical" month will be reversed. This factor takes a value of 1 for surveys conducted in September to November and March to June, i.e. "typical" months. It takes a value of 1.2 for surveys conducted in January and February and the longer school holidays, where low demand the absence of contract work will bias the results in favour of the taxi trade, and a value of 0.8 for surveys conducted in December during the pre-Christmas rush of activity. Generally, surveys in these atypical months, and in school holidays, should be avoided.

LDF = Latent Demand Factor. This is derived from the public attitude survey results and provides a measure of the proportion of the public who have given up trying to obtain a taxi at either a stance or by flagdown during the previous three months. It is measured as 1+ proportion giving up waiting. The inclusion of this factor is a tactical response to the latest guidance.

The product of these six measures provides an index value. The index is exponential and values above the 80 mark have been found to indicate significant unmet demand. This benchmark was defined by applying the factor to the 25 or so studies that had been conducted at the point it was developed. These earlier studies had used the same principles but in a less structured manner. The highest ISUD value for a study where a conclusion of no significant unmet demand had been found was 72. The threshold was therefore set at 80. The ISUD factor has been applied to over 80 studies by CH2M and has been adopted by others working in the field. It has proved to be a robust, intuitively appealing and reliable measure.

Suppressed/latent demand is explicitly included in the above analysis by the inclusion of the LDF factor and because any known illegal plying for hire by the private hire trade is included in the stance observation data. This covers both elements of suppressed/latent demand resulting from the Maude case referred to above and is intended to provide a 'belt and braces' approach. A consideration of latent demand is also included where there is a need to increase the number of taxi licences following a finding of significant unmet demand. This is discussed in the next section.

3.5 Determining the Number of New Licences Required to Eliminate Significant Unmet Demand

To provide advice on the increase in licences required to eliminate significant unmet demand, CH2M has developed a predictive model. SUDSIM is a product of 20 years experience of analysing taxi demand. It is a mathematical model, which predicts the number of additional licences required to eliminate significant unmet demand as a function of key market characteristics.

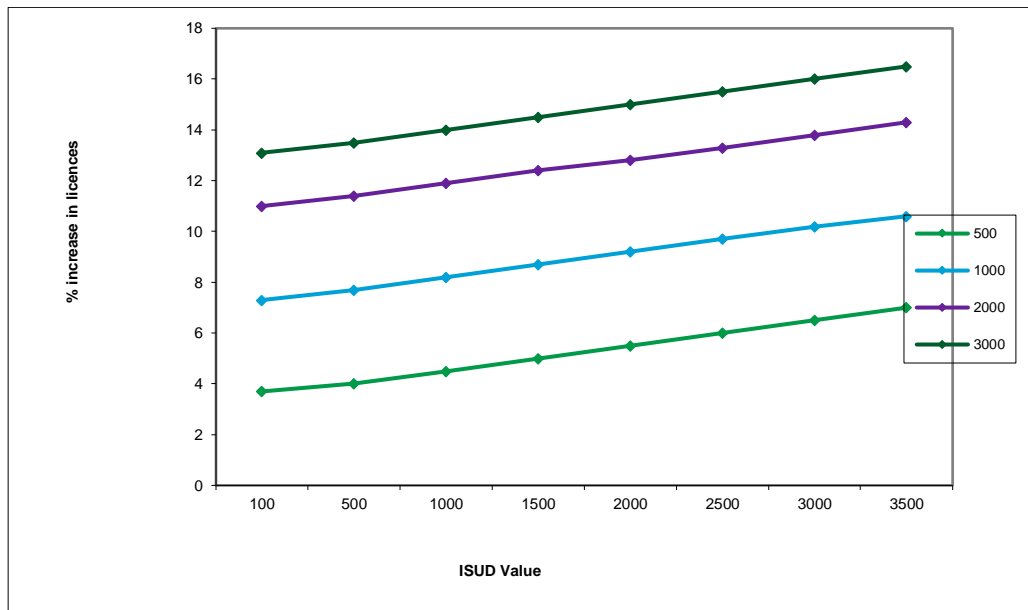
SUDSIM represents a synthesis of a queue simulation work that was previously used (1989 to 2002) to predict the alleviation of significant unmet demand and the ISUD factor described above (hence the term SUDSIM). The benefit of this approach is that it provides a direct relationship between the scale of the ISUD factor and the number of new hackney licences required.

SUDSIM was developed taking the recommendations from 14 previous studies that resulted in an increase in licences, and using these data to calibrate an econometric model. The model provides a relationship between the recommended increase in licences and three key market indicators:

- The population of the licensing authority;
- The number of taxis already licensed by the licensing authority; and
- The size of the SUD factor.

The main implications of the model are illustrated in Figure 3.1 below. The figure shows that the percentage increase in a taxi fleet required to eliminate significant unmet demand is positively related to the population per taxi (PPT) and the value of the ISUD factor over the expected range of these two variables.

Figure 3.1 – Forecast increase in taxi fleet size as a function of population per taxi (PPT) and the ISUD value



Where significant unmet demand is identified, the recommended increase in licences is therefore determined by the following formula:

$$\text{New Licences} = \text{SUDSIM} \times \text{Latent Demand Factor}$$

Where:

Latent Demand Factor = (1 + proportion giving up waiting for a taxi at either a stance or via flagdown).

3.6 Note on Scope of Assessing Significant Unmet Demand

It is useful to note the extent to which a licensing authority is required to consider peripheral matters when establishing the existence or otherwise of significant unmet demand. This issue is informed by *R v Brighton Borough Council, exp p Bunch 1989*¹. This case set the precedent that it is only those services that are exclusive to taxis that need concern a licensing authority when considering significant unmet demand. Telephone booked trips, trips booked in advance or indeed the provision of bus type services are not exclusive to taxis and have therefore been excluded from consideration.

¹ See Button JH 'Taxis – Licensing Law and Practice' 2nd edition Tottel 2006 P226-7

Evidence of Patent Unmet Demand – Stance Observation Results

4.1 Introduction

This section of the report highlights the results of the stance observation survey. The stance observation program covered a period of 182 hours during February to April 2018. Some 14,017 passengers and 10,196 departures were recorded across eight selected stances. A summary of the stance observation programme is provided in Appendix 2.

The results presented in this section summarise the information and draw out its implications. This is achieved by using five indicators:

- The Balance of Supply and Demand – this indicates the proportion of the time that the market exhibits excess demand, equilibrium and excess supply;
- Average Delays and Total Demand – this indicates the overall level of passengers and cab delays and provides estimates of total demand;
- The Demand/Delay Profile – this provides the key information required to determine the existence or otherwise of significant unmet demand;
- The Proportions of Passengers Experiencing Given Levels of Delay – this provides a guide to the generality of passenger delay.

4.2 The Balance of Supply and Demand

The results of the analysis are presented in Table 4.1 below. The predominant market state is one of equilibrium. Excess supply (queues of cabs) was experienced during 21% of the hours observed while excess demand (queues of passengers) was experienced 8% of the hours observed. Conditions are generally favourable to customers at all times of the day.

Table 4.1 – The balance of supply and demand in the Dundee stance-based taxi market (percentage of hours observed)

Period		Excess Demand (Max Passenger Queue ≥ 3)	Equilibrium	Excess Supply (Min Cab Queue ≥ 3)
Weekday	Day	0	61	39
	Night	8	81	11
Weekend	Day	5	76	18
	Night	18	58	24
Sunday	Day	8	84	8
Total 2018		8	71	21
Total 2016		8	64	28
Total 2015		8	46	46
Total 2013		6	60	34

NB – Excess Demand = Maximum passenger queue ≥ 3. Excess Supply = Minimum Cab Queue ≥ 3 – values derived over 12 time periods within an hour.

As detailed in Table 4.1 conditions have remained similar for passengers since the previous study in 2015. The number of hours where excess demand was observed have remained at 8% while the hours the market is in equilibrium has increased from 46% to 64%.

4.3 Average Delays and Total Demand

The following estimates of average delays and throughput were produced for each selected stance in Dundee (Table 4.2).

The survey suggests some 14,017 passenger departures occur per week from stances in Dundee involving some 10,196 cab departures. The taxi trade is concentrated at the stance at Nethergate (Steeple Church) accounting for 32% of the total passenger departures. On average cabs wait 12.51 minutes for a passenger. On average passengers wait 0.25 minutes for a cab.

Since the previous study in 2016 passenger demand has decreased and passenger delay has remained similar.

Table 4.2 Average Delays and Total Demand (Delays in Minutes)

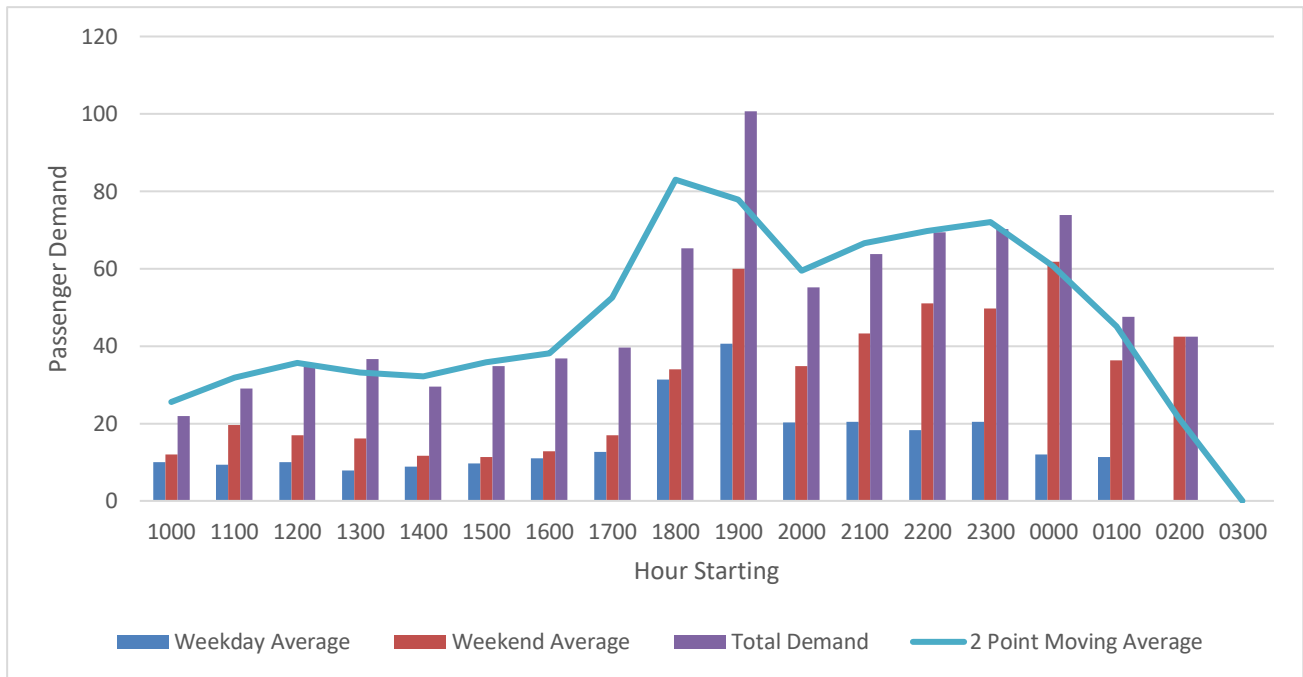
Stance	Passenger Departures	Cab Departures	Average Passenger Delay in Minutes	Average Cab Delay in Minutes
Dundee Rail Station	2,883	1,968	0.06	15.92
Nethergate (Steeple Church)	4,540	2,994	0.00	10.70
Market Gate	1,344	839	0.16	6.98
Meadowside	1,183	710	0.05	25.33
Nethergate DCA	1,006	514	2.32	2.31
Lochee High Street	687	661	0.00	13.65
Brook Street, Broughty Ferry	1,528	1,373	0.48	7.76
Nine Wells Hospital	847	1,137	0.00	17.13
Total 2018	14,017	10,196	0.25	12.51
Total 2016	19,456	13,302	0.21	11.42
Total 2015	15,081	9,296	0.09	18.54
Total 2013	10,492	7,230	0.28	20.31

4.4 The Delay/Demand Profile

Figure 4.1 provides a graphical illustration of passenger demand for the Monday to Saturday period between the hours of 10:00 and 03:00.

Section 4 – Evidence of Patent Unmet Demand – Stance Observation Results

Figure 4.1 Passenger Demand by Time of Day in 2018 (Monday to Saturday)



The profile of demand shows peaks in demand at midnight on a weekend and at 1900 on weekdays.

Figure 4.2 Passenger Delay by Time of Day in 2018 (Monday to Saturday)

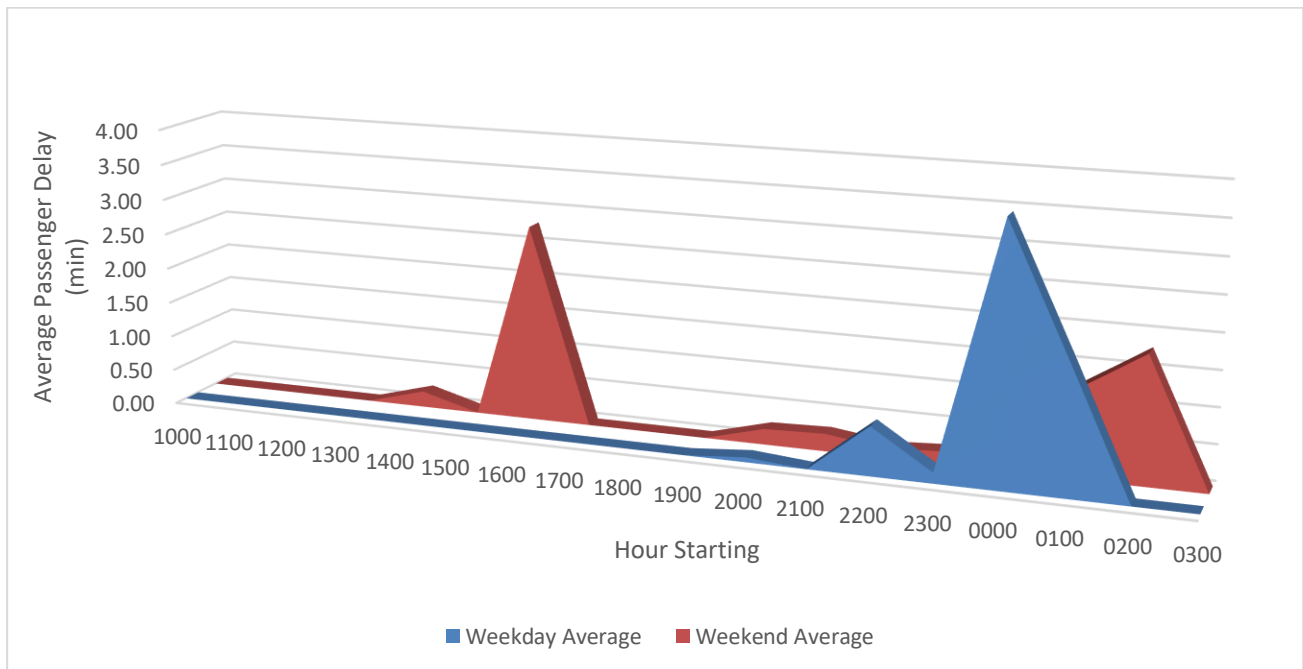


Figure 4.2 provides an illustration of passenger delay by the time of day for the weekday and weekend periods. It shows that delay peaks on weekdays between 2300 and 0100, and during the afternoon and night on weekends.

4.5 The General Incidence of Passenger Delay

The stance observations data can be used to provide a simple assessment of the likelihood of passengers encountering delay at stances. The results are presented in Table 4.3 below.

Table 4.3 – General incidence of passenger delay (percentage of passengers travelling in hours where delay exceeds one minute)

Year	Delay > 0	Delay > 1 min	Delay > 5 min
2018	3.98	2.11	0.14
2016	8.29	1.73	0.00
2015	5.03	1.98	0.22
2013	9.28	2.93	0.81

In 2018, 2.11% of passengers are likely to experience more than a minute of delay. It is this proportion (2.11%) that is used within the ISUD as the 'Generality of Passenger Delay'. This is very similar proportion as in 2016.

Evidence of Suppressed Demand – Public Attitude Pedestrian Survey Results

5.1 Introduction

A public attitude survey was designed with the aim of collecting information regarding opinions on the taxi market in Dundee. In particular, the survey allowed an assessment of flagdown, telephone and stance delays, the satisfaction with delays and general use information.

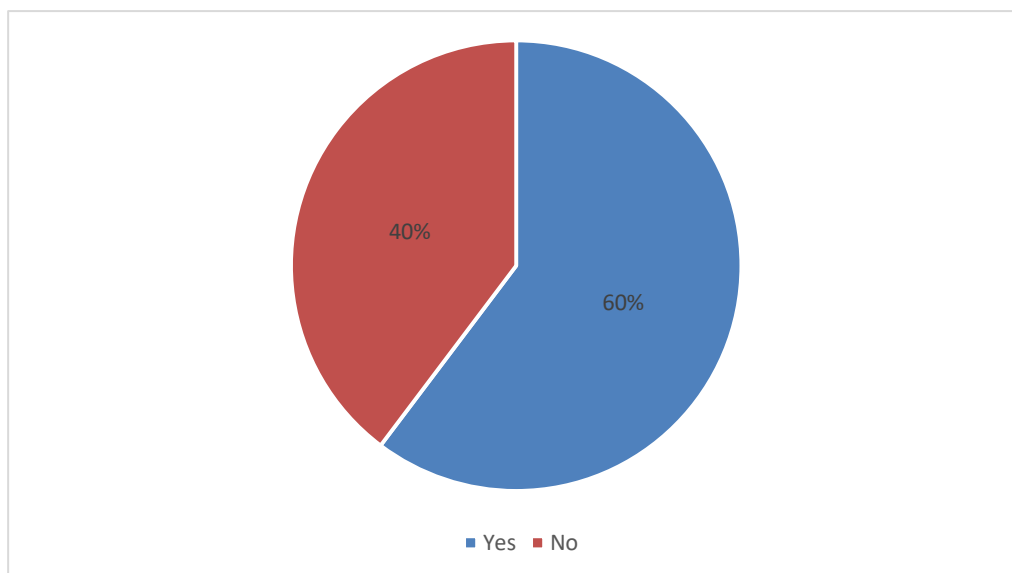
The survey was hosted online and promoted via Dundee City Council’s website and the link was emailed to a range of stakeholders. Some 49 responded to the on-line survey. These were then supplemented by a further 160 on street surveys. In total, some 209 surveys were received.

It should be noted that in the tables and figures that follow the totals do not always add up to the same amount which is due to one of two reasons. First, not all respondents were required to answer all questions; and second, some respondents failed to answer some questions that were asked.

5.2 General Information

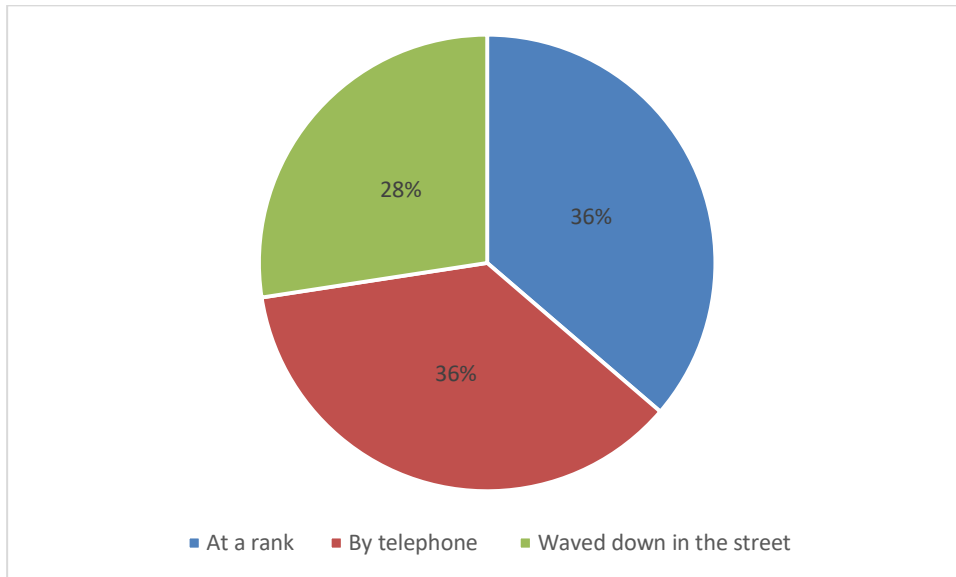
Respondents were asked whether they had made a trip by taxi in the past three months. Figure 5.1 shows that 60% (126) of the 209-people surveyed had made a trip by taxi in the last three months.

Figure 5.1 – Have you made a trip by taxi in the last three months?



Trip makers (126) were asked how they obtained their taxi or private hire vehicle. Some 36% of trip makers (45) stated that they hired their taxi at a rank while 28% (34) obtained a taxi by on-street flagdown. Some 36% (45) of trips were achieved by telephone. Figure 5.2 reveals the pattern of hire.

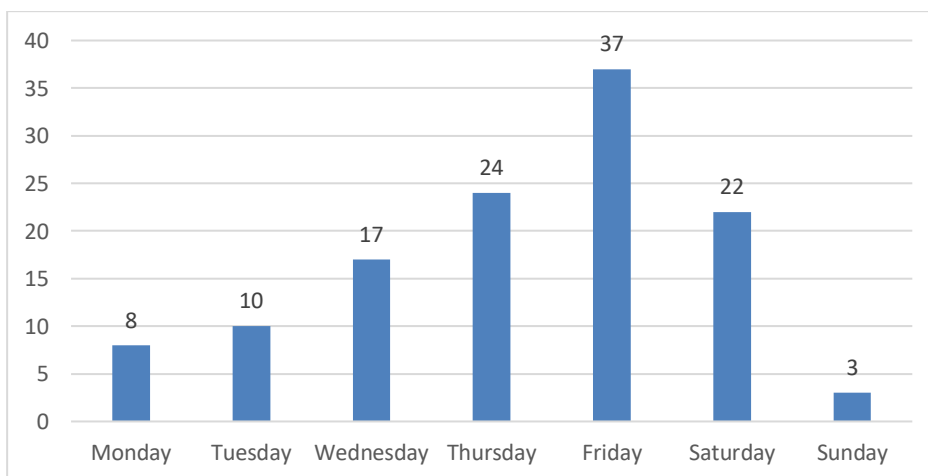
Figure 5.2 – Method of hire for last trip



Respondents were asked what type of vehicle they had obtained on their last trip. Some 77% were saloon vehicles and 23% were wheelchair accessible. They were then asked if they were satisfied with the time taken and the promptness of the vehicles arrival. When considering all hirings, the majority of customers (88%) were satisfied with their last taxi journey.

Respondents were also asked at what time of the day they obtained their taxi and on what day of the week it was. The results indicate that the majority (43%) took a taxi in the evening between 6pm-10pm, followed by 32% at night after 10pm and 25% during the day before 6pm. Figure 5.3 shows what day of the week respondents obtained a taxi, which indicates that a Friday was the most popular day of the week with 37 (31%) respondents indicating this.

Figure 5.3 – Day of the week respondents obtained a taxi

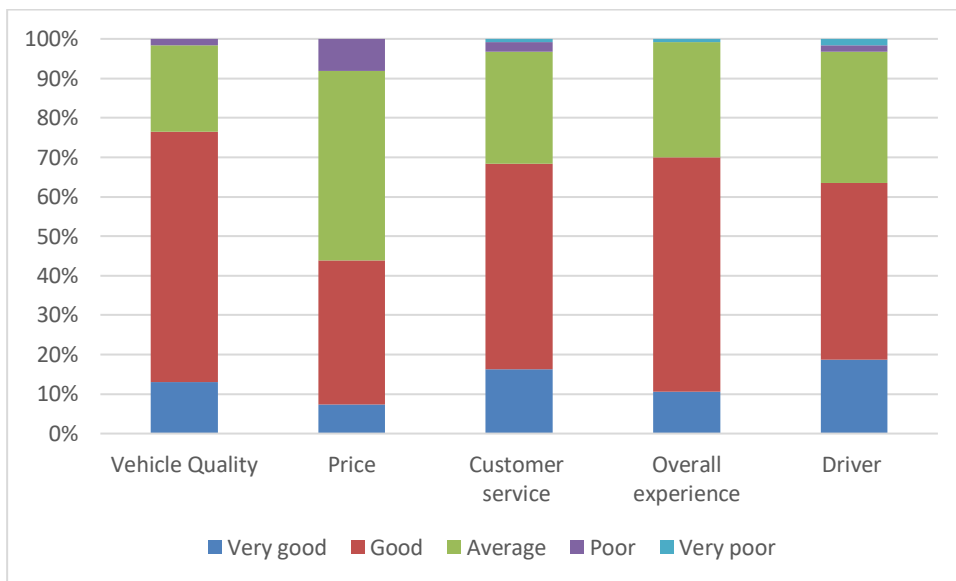


Trip makers were asked to rate five elements from their last taxi journey on a scale from very poor to very good. The results in Figure 5.4 show that most elements were generally good, apart from price which was

average. When poor ratings were given respondents were asked to provide a reason for their rating. Negative ratings included reasons such as:

- Driver rude/not understanding/poor quality English
- Prices too high/expensive
- Boundary charge going to Angus city centre
- Dissatisfaction with the car being travelled in
- Time taken to pick up

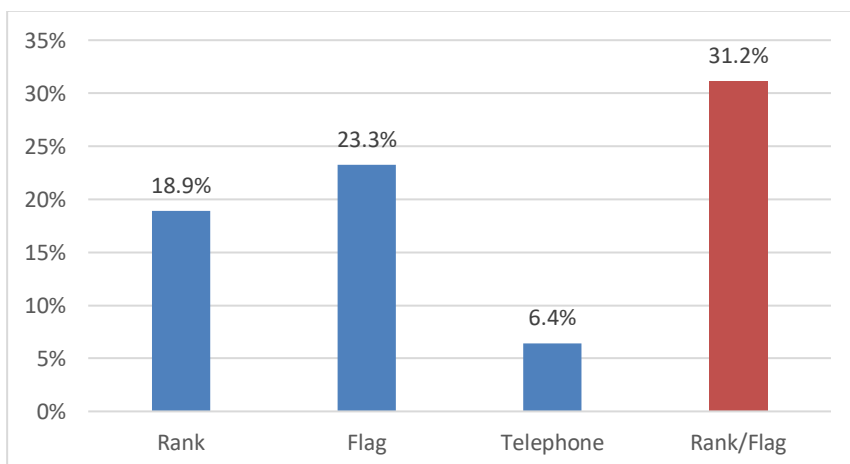
Figure 5.4 – Rating of last journey



5.3 Attempted method of hire

In order to measure demand suppression, all respondents were asked to identify whether or not they had given up waiting for a taxi at a rank, on the street, or by telephone in Dundee in the last three months. The results are summarised in Figure 5.5. This indicates that most people gave up waiting for a taxi by flagdown or on the street followed by at a rank.

Figure 5.5 – Latent demand by method of hire – Given up trying to book a taxi?



This has implications for the interpretation of the results (see Chapter 8 below).

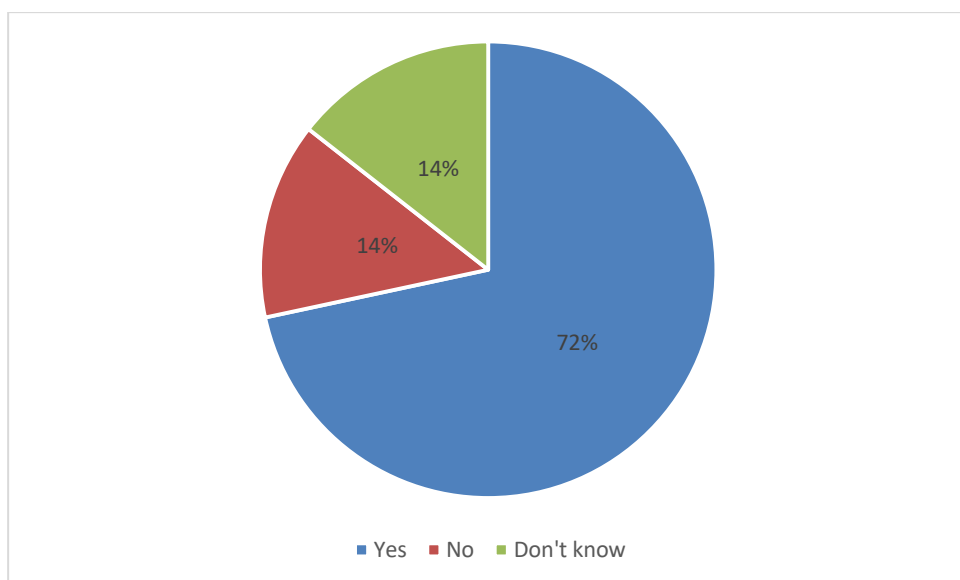
Respondents who had given up trying to obtain a taxi in the last three months were asked the location where they had given up waiting for a taxi. The most common areas respondents gave were the city centre, Perth road and McManus as well as the West End.

In addition, the majority of respondents had given up waiting at night and the early hours of the morning.

5.4 Service Provision

Participants were subsequently asked whether they feel there are enough taxis in Dundee at the current time. Some 72% (144) commented that there are sufficient taxis in Dundee (see Figure 5.6).

Figure 5.6 – Do you think there are enough taxis in Dundee to suit your needs?



The survey then asked respondents whether taxi services in Dundee could be improved. Some 28% (54) felt that they could be improved while 30% thought no improvements were needed. Respondents were then asked to suggest what could be done to improve the services, with a variety of suggestions made. Most popular suggestions included:

- Cheaper taxis
- Smarter/nicer drivers
- More taxis and more at night
- More ranks

5.5 Ranks

Respondents were asked if they felt there was sufficient provision of taxi ranks in Dundee. Some 47% of respondents felt that there are currently enough ranks in Dundee. Suggested improvements from respondents who answered 'no' are listed in Table 5.1.

Table 5.1 – Suggested improvements for taxi ranks in Dundee

Suggested Improvement	No. of Responses
Provide information on location of existing ranks	8
Provide new ranks	23
Improve signage of existing ranks	1
Other: <ul style="list-style-type: none"> Access- many taxi ranks have no dropped kerbs near the rank 	1

Respondents were asked if there were any locations in Dundee where new ranks were needed. A total of 35% said that no new ranks were needed in Dundee whilst 52% stated they did not know. The remaining 13% of respondents who stated that they would like to see new ranks were asked to provide a location. The most common locations cited included:

- West end
- Perth road
- Kingsway

5.6 Summary

Key points from the public attitude survey can be summarised as:

- There is an equal split between those obtaining a taxi at a rank or by phone (36% each);
- High levels of satisfaction with last taxi trip made – especially vehicle quality;
- Some 31.2% of people had given up trying to obtain a taxi at a rank or by flagdown;
- Some 28% of people felt that taxi services could be improved – more taxis provided at a cheaper price and comments about the drivers; and
- Some 13% of people believe that new ranks are needed in specific locations.

Consultation

6.1 Introduction

Guidelines issues by the Scottish Government state that consultation should be undertaken with the following organisations and stakeholders:

- All those working in the market;
- Consumer and passenger (including disabled) groups;
- Groups which represent those passengers with special needs;
- The Police;
- Local interest groups such as hospitals or visitor attractions; and
- A wide range of transport stakeholders such as rail/bus/coach providers and transport managers.

In order to consult with relevant stakeholders across Dundee, written consultation was undertaken.

6.2 Indirect (Written) Consultation

A number of stakeholders were contacted by letter and email. This assured the Scottish Government guidelines were fulfilled and all relevant organisations and bodies were provided with an opportunity to comment.

In accordance with advice issued by the Scottish Government the following organisations were contacted:

- Dundee City Council;
- Trade representatives;
- User/disability groups representing those passengers with special needs;
- Local interest groups including hospitals, visitor attractions, entertainment outlets and education establishments; and
- Rail bus and coach operators.

A summary of the responses received are provided below.

Mackinnon Centre Dundee

The written consultation letter was circulated to centre members.

Responses from users of the centre varied. The majority of those who responded said that there were enough taxis but not enough wheelchair accessible taxis. With regard to restricting the number of taxis, the majority of those who responded said that they didn't know as they did not use these types of taxis. One respondent said that numbers should not be restricted.

The majority of respondents said that there was sufficient private hire vehicle however they also felt that there are not enough wheelchair accessible ones. The majority of respondents said this was the type of service they used most.

All respondents have had experience of the wrong type of taxi being sent for them e.g. saloon instead of wheelchair accessible or side loading instead of back loading.

The general view was that taxis were usually clean and drivers well-presented, several with shirt and tie. Overall it was felt that drivers were generally chatty and helpful but on occasion some drivers can be rude and unhelpful.

Training in the use of belts in wheelchair accessible vehicles was identified as an area for improvement as on occasion drivers did not correctly fit or did not fit belts and clamps at all and this was identified as a safety issue. It was also felt that training in customer service skills should be mandatory.

The majority of respondents said they do not use taxi ranks but of those who do, they said that additional taxi ranks at big shopping centres would be an advantage and they also identified that there were not enough taxi ranks with dropped kerb access.

All respondents felt that there should be more wheelchair accessible taxis available. One respondent also felt that people of shorter stature or with mobility issues who were not wheelchair users can have difficulty accessing certain types of taxis and more saloon type taxis would help to alleviate this. All respondents said there were no particular problems ordering a wheelchair accessible vehicle but sometimes the wrong type was sent.

It was also identified that at certain times it may be that there are long waiting times for taxis due to school contracts etc. It was also felt that taxis should all allow guide dogs. One respondent felt that drivers should wear a belt to signify that they are happy to help e.g. people with mobility problems with shopping.

It was felt that fares could be expensive if you were reliant on taxis to travel around as the minimum cost is £3.40 and the general feeling was that fares should be the same at all times.

The majority of respondents did not feel safe accessing taxis at night. The main concern of the respondents who were wheelchair users was around the safe clamping and use of belts whilst travelling in taxis as a number had experienced occasions when taxi drivers had not used belts and clamps properly. The majority tended to use private hire vehicles and said that they felt safer with these than taxis. A number of respondents said they preferred to use the new blue bus service for cost effectiveness. Furthermore, none of the respondents felt safe waiting at taxi ranks.

Respondents felt that the different types of public transport did not complement each other. The majority predominately use taxis although a few now use the blue bus.

Tay Taxis

Tay Taxis considered the supply of taxis and private hire vehicles adequate across all time periods. They also were happy with the current policy of limitation.

With regard to the image of the taxi trade they considered the type and quality of vehicles to be poor. They also considered vehicle cleanliness, driver attitudes and driver quality to be poor as well. It was noted that driver appearance could be better and that there was a need for additional training although the type of training was not specified.

Generally, it was considered that taxi ranks were in the correct location but that additional ranks were required at the Victoria and Albert museum, North Lindsay St, Blackness and Clepington Road. It was also suggested that ranks should be marshalled.

It was suggested that no additional wheelchair vehicles were required.

Publicity about taxi and private hire services was considered inadequate and it was suggested that the licence board should inform the public.

Dundee Taxi Association

The supply of taxis and private hire vehicles including wheelchair accessible vehicles was considered to be very good across Dundee. It was also considered that it was easy to pre-book a wheelchair accessible vehicle. The Association were in favour of maintaining the current limitation policy as there are more than enough taxis to meet demand. It was noted that there are a lot of different types of vehicle in Dundee that gives a variety to suit all types of passengers. Most are clean inside and outside but there are some that let the trade down, however this is the case in most places with a large fleet. Most drivers are very polite and know their way around Dundee, but some drivers have poor topographical knowledge.

Reference was made to a lot of drivers not adhering to the dress code and the lack of enforcement. With regard to training, everyone including new drivers has done or has to do an SVQ or equivalent designed for the Taxi & Private Hire industry. The Association see no reason why once you have done this and you are working in the industry that top up training is required.

The Association would like to see additional ranks at: South Rd top right Butters loan; Charleston Dr near to shops top left of Aran Dr; The V&A Museum; top right hand side of Crichton St; the Rock Pub and the new waterfront development when completed. More signage is required at ranks including a large Taxi sign at the front of all ranks. Yellow markings were also suggested to be made more prominent & kept better maintained.

It was suggested that parking wardens could enforce taxi ranks more with regard to vehicles parking on them. Further suggestions included: dropped kerbs for wheelchair users; small yellow box on roads to allow taxis to pull out when traffic is queueing.

In relation to fares it was highlighted that Dundee were in the bottom third of the table in PHTM and that they haven't kept up with running costs and inflation.

With regard to safety it was suggested that there could be a greater Police presence on all City Centre weekend night ranks.

Dundee Community Transport (DCT)

DCT considered that taxi supply seems to be more than adequate in Dundee and that there always seems to be taxis waiting at ranks indicating that the limitation policy should be maintained.

Private hire provision was also considered to be adequate.

It was noted that taxis are usually clean and tidy and most drivers are courteous and helpful to wheelchair passengers.

Wheelchair accessible taxis nearly always arrive very shortly after requesting them – 2-10 minutes – so it was felt that there are probably sufficient.

Fares were considered to be reasonable.

Day Centre Manager

On reading the consultation letter a manager of a day centre in Dundee expressed their experiences of hiring wheelchair accessible vehicles. Comment was made as to the need to book wheelchair accessible vehicles

well in advance, mainly to guarantee that they will turn up. She noted that the centre had to pay 'over the odds' for pre-booked taxis and even more so to guarantee a certain time. This was considered to be discriminatory.

Head of Disability Services, University of Dundee

The University were not aware of any accessibility issues being raised by disabled students using taxis in Dundee. However, given the anticipated increase in visitors to Dundee with the opening of the new V&A, it is likely that there will be an increase in disabled people who need to use accessible taxis so an increase in this provision may be justified on this basis alone.

In addition, with the introduction of the new BSL (Scotland) Act, it would be timely to consider Deaf awareness training for taxi drivers as well as general disability awareness training if this is not already offered.

GMB union

Members of the GMB consider there to be a more than adequate supply of taxis and private hire vehicles (possibly too many) across all areas of Dundee. The Union disagree with the current limitation policy. The GMB union believe that there should be a uniform fully accessible fleet (i.e. all the same type of taxi). With regard to the existing fleet they considered most vehicles to be clean and tidy and most drivers attitudes and quality are good, but some are not. It was noted that some drivers let the team down with dress code.

It was considered that there was no need for more training.

In relation to ranks it was suggested that better signage was required for visitors to the city.

Fares were considered to be low as there are too many taxis.

Deriving the Significant Unmet Demand Index Value

7.1 Introduction

The data provided in the previous chapters can be summarised using CH2M’s ISUD factor as described in Chapter 3.

The component parts of the index, their source and their values are given below;

Average Passenger Delay (Table 4.2)	0.25
Peak Factor (Figure 4.2)	1
General Incidence of Delay (Table 4.3)	2.11
Steady State Performance (Table 4.1)	0
Seasonality Factor (Section 3)	1
Latent Demand Factor (Section 5)	1.31
ISUD (0.25*1*2.11*0*1*1.31)	0

The cut off level for a significant unmet demand is 80. It is clear that Dundee is well below this cut off point as the ISUD is 0, indicating that there is **NO significant unmet demand**. This conclusion covers both patent and latent/suppressed demand.

Supply of Taxis

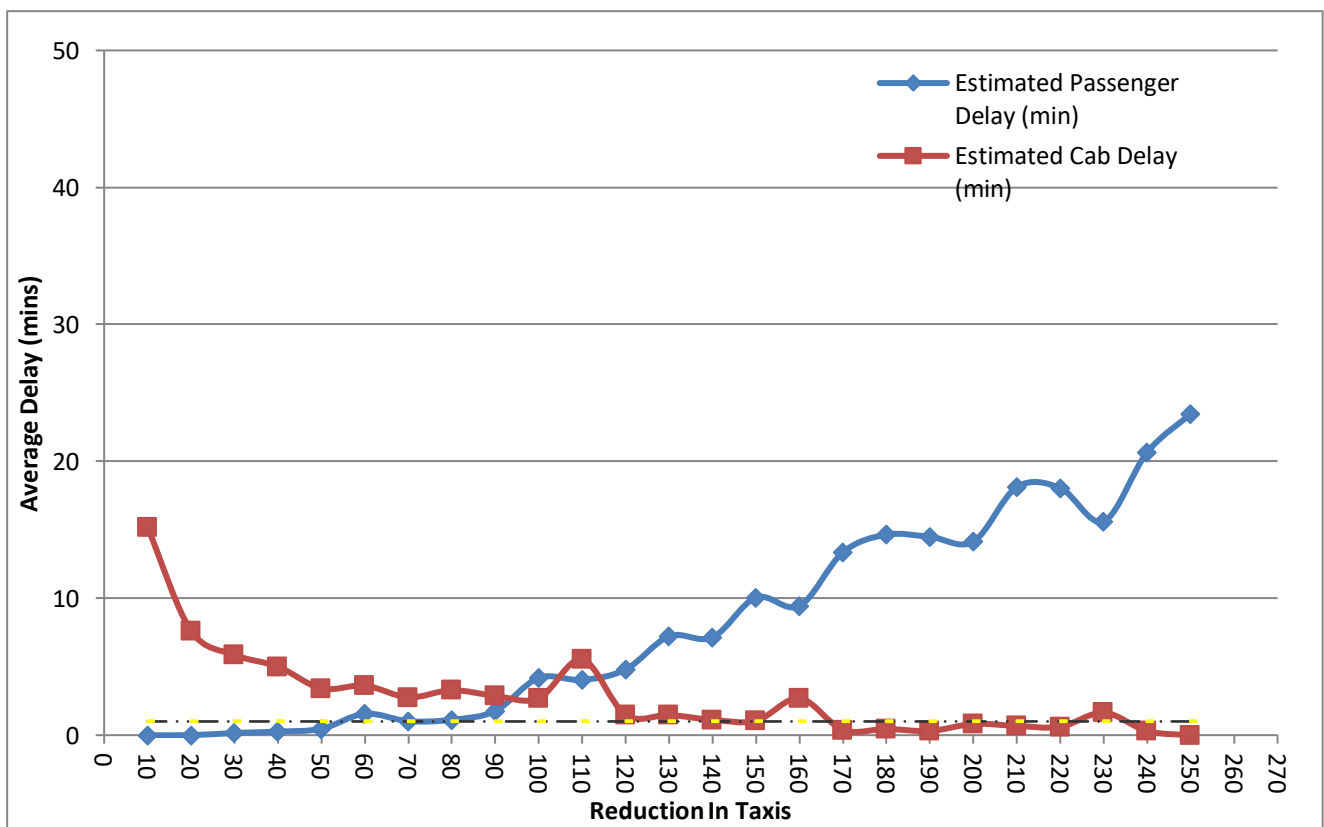
8.1 Introduction

To examine the extent to which there may be an excess supply of vehicles, relative to demand in Dundee, a simulation exercise has been conducted. The exercise used CH2M’s STAR4 simulation model (Simulation of Taxis at Ranks). The simulation takes a typical daytime observation period (in this case Nethergate stance between 10am and 6pm on 27th February 2018) and estimates the impact of reducing the number of vehicles serving the stance on cab and passenger queues and delays. The analysis is intended to be indicative of the general impact of reduced supply and should not be interpreted as a recommendation for any given reduction in the size of the fleet. The results of the analysis are presented in Figure 8.1 below.

8.2 Analysis

The analysis shows that the removal of around 20 licences from circulation on the day in question would have been unlikely to have resulted in any passenger delay at the stance. On the other hand, cabs at the stance would have experienced significantly faster turn-around times. A reduction in the fleet beyond this would result in the introduction of passenger delay at the stance, with the level of passenger delay generally increasing as the fleet is reduced in size. Average passenger delay would reach 1 minute if the fleet were to be reduced by 55 vehicles. This exercise was designed to show the effect of removing licences during typical day time conditions however during non-typical conditions i.e. at a busy night time stance the effect may differ.

Figure 8.1 – Assessment of Supply – Simulation Results



Summary and Conclusions

9.1 Introduction

CH2M has conducted a study of the taxi market on behalf of Dundee City Council. The present study has been conducted in pursuit of the following objectives. To determine;

- Whether or not there is a significant unmet demand for taxi services within Dundee as defined in Section 16 of the Transport Act 1985; and
- How many additional taxis are required to eliminate any significant unmet demand.

This section provides a brief description of the work undertaken and summarises the conclusions.

9.2 Significant Unmet Demand

The 2018 study has identified that there is NO evidence of significant unmet demand for taxis in Dundee. This conclusion is based on an assessment of the implications of case law that has emerged since 2000, and the results of CH2M's analysis.

It is clear from the results that demand for taxi services has decreased in Dundee since the last survey in 2016, but that people are well served by the trade given that passenger delay has only marginally increased since the last survey. This decrease in demand may also be due to the winter weather experienced at the start of the survey period.

9.3 Public Perception

Public perception of the service was obtained through the undertaking of 209 surveys. Overall the public were generally satisfied with the service – key points included;

- Some 36% of hirings are from a stance;
- High levels of satisfaction with delay on last trip – hiring by on street flagdown providing the highest levels;
- Some 31.2% of people had given up trying to obtain a taxi at a rank or by flagdown;
- Some 28% of people felt that taxi services could be improved – more taxis provided at a cheaper price and comments about the drivers; and
- Some 13% of people believe that new ranks are needed in specific locations.

9.4 Recommendations

Our 2018 study has identified that there is NO evidence of significant demand in Dundee. This conclusion covers both patent and latent/suppressed demand and is based on an assessment of the implications of case law that has emerged since 2000, and the results of CH2M's analysis.

On this basis the authority has the discretion in its taxi licensing policy and may either:

- Maintain the current limit of 555 taxi licences;
- Issue any number of additional plates as it sees fit, either in one allocation or a series of allocations; or
- Reduce the numerical limit to 535.